REMARKS

In accordance with the foregoing, claim 16 has been amended and claim 38 has been cancelled. Claims 16-37 are pending and under consideration

Claims 16-38 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,157,408 to Wagner et al., or U.S. Patent No. 5,859,612 to Gilhousen.

Referring to column 1, lines 16-46 of Wagner et al., the bearing of a mobile object (an aircraft) in relation to another object (an aircraft carrier) is determined by using a rotating antenna which amplitude modulates pulse pairs as it sweeps through a 360° revolution. To the aircraft, the signal envelope of the pulse pairs appears to be amplitude modulated with a peak occurring each time the antenna points directly at the aircraft. As the antenna beam sweeps through a North reference bearing, the aircraft carrier transmits a series of closely spaced pulses, which are referred to as a North burst signal. If the aircraft is due East of the aircraft carrier, the North burst coincides with the envelope peak. When the aircraft is positioned at another location, the North burst and the maximum amplitude peak are separated in time. Based on the time of separation, the position is determined.

In Wagner et al., the reference event may be considered the North burst or the amplitude modulation. However, this reference event does not have a predefined data structure for the radio signal or a predefined data content for the radio signal, as required by independent claims 16 and 36. The radio signal in Wagner et al. is not even a data signal. Accordingly, the reference event is clearly not a predefined data structure or predefined data content. In addition, independent claim 16 recites that the mobile object checks for the reference event when the mobile object detects the radio signal. Independent claim 36 is directed to a user terminal, which include a device to check for the presence of the reference event. In Wagner et al., both the North burst and the amplitude modulation must be determined. If the aircraft detects only one of these, the position can not be determined. It is therefore not clear if the reference event is detected when the mobile object detects the radio signal. Because of these differences, it is submitted that the claims patentably distinguish over Wagner et al.

With regard to Gilhousen, this references discloses a plurality of different embodiments. Although the Examiner cites Figs. 2-9, it appears that the embodiment shown in Fig. 8 is most relevant. This embodiment is described at column 14, lines 16-58 of the reference. Referring to Fig. 8, a rotating antenna at a base station 810 transmits a signal having its own Walsh code. The rotating antenna has a beam 830 which rotates around the cell 840 in the cellular telephone system. The beam 830 has a rotational timing that is known by the mobile station 820. The

rotating beam signal is received at the mobile station 820, and based on a reception time when either a null or a peak of the rotating beam signal is received by the mobile station 820, an angular displacement value θ corresponding to the angular position of the mobile station 820 is determined. A round trip signal propagation time between a stationary antenna (preferably located at base station 810) and the mobile station 820 may be measured in order to determine the distance between the base station and the mobile station. All calculations are performed in the base station or in the mobile switching center.

The amended claims recite that the mobile object detects a reference event in order to determine the position, the reference event being a predefined data structure or predefined data content. In Gilhousen, the mobile station detects a peak signal when the rotating beam is directed toward the mobile station. The signal is transmitted with a Walsh code. However, the mobile station is not detecting anything with regard to the Walsh code. This is a first difference.

Gilhousen indicates that the mobile station receives timing information from signals transmitted by the base station 810. However, since the mobile station does not know any other reference apart from the rotational timing, it cannot determine the angular position itself. Although not described, it is assumed that the mobile station informs the base station that it received the rotating signal at a certain instant and the base station then calculates the angular position of the mobile station. Thus, as a second difference, claim 16 recites that the mobile object determines the position. Claim 36 is similar, but slightly different. On the other hand, in Gilhousen, it is the base station or the mobile switching center that determines the position of the mobile station. See Column 14, lines 54-56. The other embodiments of Gilhousen, which enable the mobile station to determine its own position, rely on reception signals from at least two base stations and their antennas. These are very different. Based on the foregoing differences, it is submitted that the claims patentably distinguish over Gilhousen.

Claims 16-38 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,198,528 to Maynard. This reference discloses a laser based tracking system which uses a rotating laser beam. Referring to column 4, lines 50-56, the mobile unit 36 has an intelligent reflector 38, which reflects the light (or infrared beam) back to a laser beacon. Referring to column 2, lines 14-18, the intelligent reflector may transmit the ID of the mobile unit and the time of illumination to the signal system using the incoming rotating laser beams. Referring to column 5, lines 1-9, the intelligent reflector 38 includes a first radio communication system used to transmit the ID and the time of illumination from the mobile unit to the signal system. The signal system generates the communication signal including positional information of the mobile unit

and transmits the communication signal to the mobile unit. See column 1, lines 55-58.

It should be apparent that the system of Maynard is quite similar to the system of Gilhousen. However, in Maynard, a laser beam is used which is directly reflected by the mobile unit. In Maynard, perhaps the reference event is receipt of the laser beam. However, the laser beam clearly does not include any predefined data structure or predefined data content. Also, claim 16 requires that the mobile object determines the position. Claim 38 is directed to a user terminal. On the other hand, in Maynard, the position is determined by the signal system and not by the mobile station/unit itself. Based on these differences, the prior art rejection should be withdrawn.

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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